

CASE REPORT

Anomalous Retro-psoas Iliac Artery in a Patient with an Abdominal Aortic Aneurysm

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Introduction

Congenital anomalies of the iliac arteries are very uncommon in the literature. If not recognised, they may complicate aortoiliac surgery. We report a case of an abdominal aortic aneurysm repair in a patient with an anomalous retro-psoas common iliac artery.

Case Report

A 71-year-old man was admitted to our department for treatment of an asymptomatic abdominal aortic aneurysm, measuring 50 mm at abdominal ultrasonography. There was no history of cardiac, cerebral or renal vascular disease. On physical examination he was in good general health and blood pressure was measured of 150/90 mmHg. Examination of the chest and abdomen revealed no abnormalities. Femoral and distal pulses were palpable on both sides. Routine laboratory tests were all within normal limits.

Preoperative digital subtraction angiography demonstrated that the aortic aneurysm was infrarenal with distal extension into the proximal left common iliac artery. Moreover, the arteriogram showed an anomalous right common iliac artery (Fig. 1). CT scan confirmed this finding and demonstrated that the origin of the right common iliac artery was situated between vertebral body and right psoas muscle, posterior to the inferior vena cava (Fig. 2). The distal

common and external iliac artery were situated behind the psoas muscle. CT scan also showed an aneurysm of the left common iliac artery.

At the operation, through a midline incision, the

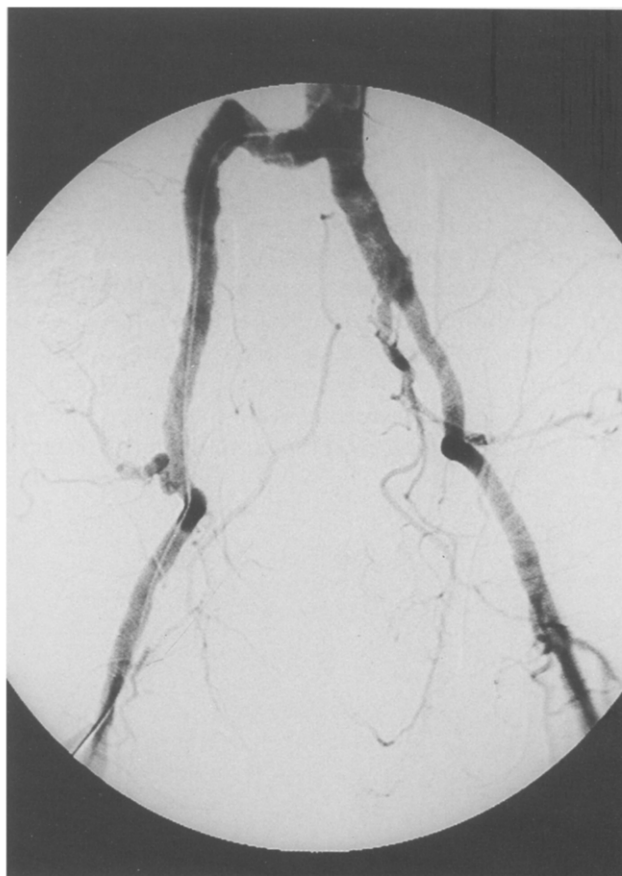


Fig. 1. The arteriogram shows the anomalous right common iliac artery originating from the aorta at an angle of about 90°.

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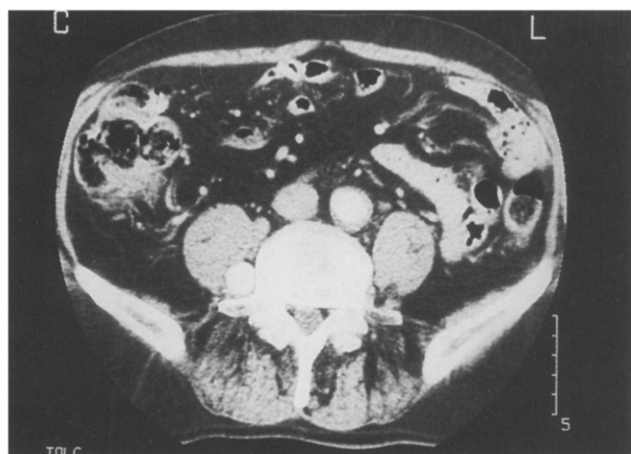


Fig. 2. The cross-sectional CT scan of the abdomen shows the anomalous right common iliac artery situated dorsomedial of the right psoas muscle and close to the vertebral body.

infrarenal aortic aneurysm was identified and easy control of the aneurysmal neck obtained. The origin of the anomalous right common iliac artery and the bifurcation of the aneurysmal left common iliac artery were dissected free. The right common iliac artery arose from the abdominal aorta at a 90° angle and continued its course between the psoas muscle and the vertebral body. A 18/9 mm dacron bifurcation prosthesis was used to repair the aneurysm. Proximally, the prosthesis was anastomosed end-to-end on the infrarenal aorta, and distally end-to-end on the origin of the anomalous common iliac artery on the right side and just proximal to the iliac bifurcation on the left side, thus excluding also the aneurysm of the proximal left common iliac artery.

The postoperative course was uneventful and the patient was discharged on the tenth day after surgery.

Discussion

An anomalous iliac artery is extremely rare in the literature.^{1,2} Normally, the common iliac and external iliac arteries are derived from the umbilical arteries at the end of the fourth week of gestation. The umbilical arteries develop a secondary connection to the fifth lumbar intersegmental branches of the aorta and these new trunks form the common iliac arteries from which the external iliac arteries subsequently arise.^{3,4} It may be possible that the retro-psoas iliac artery in our case embryologically was derived from an abnormal secondary connection between the umbilical artery and the fourth, instead of the fifth, lumbar intersegmental artery.²

The vascular anomaly in the present case was an accidental finding and was comparatively easily detected because a number of routine preoperative diagnostic imaging studies had been performed for planning the abdominal vascular operation. However, the possibility of such a vascular anomaly is also of importance in non-vascular operations in this anatomical area. Therefore, to prevent haemorrhagic complications, an anomalous retro-psoas iliac artery should not only be kept in mind by vascular surgeons but also by surgeons performing orthopaedic or neurosurgical operations to the vertebrae.

References

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